

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/11026

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :A61K 38/17; C07K 14/875

US CL :514/12

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 514/12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS, CAPLUS

search terms: uteroglobin, phospholipase, fibronectin, lung surfactant

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X -- Y	LEYTON et al. Recombinant human uteroglobin inhibits the in vitro invasiveness of human metastatic prostate tumor cells and the release of arachidonic acid stimulated by fibroblast-conditioned medium. Cancer Res. 15 July 1994, Vol. 54, pages 3696-3699, see Abstract and page 3697, column 1, full paragraph 1.	1, 3-6, 8-10 -- 2, 7, 11, 12
Y	EDELSON et al. Acute lung injury induced by phospholipase A <sub>2</sub> : Structural and functional changes. Am. Rev. Respir. Dis. MAY 1991, Vol. 143, pages 1102-1109, see page 1102, column 1, full paragraph 1, paragraphs bridging columns 1-2 and columns 2-3, paragraph bridging pages 1105-1106.	2, 7

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
*A* document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
*E* earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*Z* document member of the same patent family
*O* document referring to an oral disclosure, use, exhibition or other means	
*P* document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 17 AUGUST 1998	Date of mailing of the international search report 24 SEP 1998
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer DAVID S. ROMEO Telephone No. (703) 308-0196

Form PCT/ISA/210 (second sheet)(July 1992)\*

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,266,562 A (MUKHERJEE et al.) 30 November 1993, column 8, full paragraph 1.	11, 12

Form PCT/ISA/210 (continuation of second sheet)(July 1992)\*

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## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Please See Extra Sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☒ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:  
1-12
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.  
☒ No protest accompanied the payment of additional search fees.

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## BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING

This ISA found multiple inventions as follows:

This application contains the following inventions or groups of inventions which are not so linked as to form a single inventive concept under PCT Rule 13.1:

Group I, claim(s) 1-5, drawn to a pharmaceutical composition.

Group II, claim(s) 6-10, drawn to a pharmaceutical composition.

Group III, claim(s) 11-12, drawn to a pharmaceutical composition.

Group IV, claim(s) 13-25, drawn to a method of inhibiting PLA<sub>2</sub> *in vivo*.

Group V, claim(s) 26-40, 65, and 106-109, drawn to a method of treating an inflammatory condition.

Group VI, claim(s) 41-53, and 66, drawn to a method of treating a fibrotic condition.

Group VII, claim(s) 54-64, and 67, drawn to a method of treating a uteroglobin deficiency.

Group VIII, claim(s) 68-72, drawn to a cosmetic composition.

Group IX, claim(s) 73-77, drawn to a cosmetic composition.

Group X, claim(s) 78-82, drawn to a blood supplement.

Group XI, claim(s) 83-87, drawn to a blood supplement.

Group XII, claim(s) 88-92, drawn to an assay for quantitating uteroglobin.

Group XIII, claim(s) 93-105, drawn to a method of treating fibrillogenesis.

The inventions listed as Groups I-XIII do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

With respect to unity of invention PCT Rule 13.1 states:

The international application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept ("requirement of unity of invention").

Additionally, PCT Rule 13.2 states:

Where a group of inventions is claimed in one and the same international application, the requirement of unity of invention referred to in Rule 13.1 shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression "special technical features" shall mean those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art.

With regard to the application of PCT Rule 13, 37 CFR § 1.475 concerning unity of invention states:

(a) An international and a national stage application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept ("requirement of unity of invention"). Where a group of inventions is claimed in an application, the requirement of unity of invention shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression "special technical features" shall mean those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art.

(c) If an application contains claims to more or less than one of the combinations of categories of invention set forth in paragraph (b) of this section, unity of invention might not be present.

(d) If multiple products, processes of manufacture or uses are claimed, the first invention of the category first mentioned in the claims of the application and the first recited invention of each of the other categories related

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thereto will be considered as the main invention in the claims, see PCT Article 17(3)(a) and 37 C.F.R. § 1.476(c).

(c) The determination whether a group of inventions is so linked as to form a single general inventive concept shall be made without regard to whether the inventions are claimed in separate claims or as alternatives within a single claim.

Groups I-XIII recite a plurality of pharmaceutical compositions and/or methods each having a different intended use. The single inventive concept joining these disparate intended uses appears to be that the pharmaceutical compositions comprise and the methods use recombinant human uteroglobin. In order for the inventions of groups I-XIII to have unity of invention it is necessary that the single inventive concept be a contribution to the prior art. However, LEYTON et al. (Cancer Research 54:3696 3699, July 15, 1994) teach recombinant human uteroglobin, teach that 1  $\mu$ M recombinant human uteroglobin inhibits arachidonic acid release, and suggest recombinant human uteroglobin inhibits tumor cell invasiveness through inhibition of PLA<sub>2</sub>-mediated arachidonic acid release. A pharmaceutical composition comprising a PLA<sub>2</sub> inhibiting effective amount of recombinant human uteroglobin would have been obvious to one of ordinary skill in the art. Therefore, the inventions of groups I-XIII do not fulfill the requirements for unity of invention with respect to a contribution which each of the inventions makes over the prior art. Accordingly, the claims are not so linked by a special technical feature within the meaning of PCT Rule 13.2 so as to form a single inventive concept.

